

FACT SHEET FOR NPDES PERMIT WA0037753
ALDERBROOK RESORT AND SPA

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES) of permits, which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the state of Washington to administer the NPDES permit program. Chapter 90.48 Revised Code of Washington (RCW) defines the Department of Ecology's (Department) authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the state include procedures for issuing permits [Chapter 173-220 Washington Administrative Code (WAC)], technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least 30 days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	South Forty Utilities, LLC
Facility Name and Address	Alderbrook Resort and Spa E 7090 Highway 106
Type of Treatment:	Extended aeration activated sludge plant
Discharge Location	Hood Canal Latitude: 47° 21' 19" N Longitude: 123° 03' 57" W.
Water Body ID Number	Old Number WA-PS-0110, New Number 47123D0F6

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

The Alderbrook Resort and Spa serves a resort and several residences on the south shore of Hood Canal approximately 1¼ miles east of Union, Washington.

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HISTORY

The waste water treatment plant was originally constructed in 1978 to serve the resort and is the only permitted marine discharge to southern Hood Canal. All other residences and businesses from Union to Belfair are served at the present time by on-site septic systems.

During the last couple of permit cycles the sewage plant received upgrades to include a new clarifier and UV disinfection system.

The Alderbrook Inn has gone through a few owners over the last 25 years with Christa Ministries being the last owner before the facility and lands were purchased by the most recent owners. The latest owners have undertaken a multi-million dollar reconstruction of the entire resort including re-routing of Highway 106 around the resort. During this process, the sewage works have been completely shut down. The upland portion of the outfall will be reconstructed, the marine portion of the outfall has been extended and much of the collection system will be reconstructed including a new lift station.

COLLECTION SYSTEM STATUS

The collection system serves the Alderbrook Inn, restaurant, bar, laundry, 20 cabins, and a few part-time residences in the vicinity of the Inn. Because of the rerouting of the Highway, several septic systems for additional residences will be obliterated. These additional residences will also be connected to the treatment works. There is one main lift station that pumps the raw sewage up to the treatment plant where the sewage gravity flows through the plant to the outfall.

TREATMENT PROCESSES

The treatment plant is an extended aeration activated sludge plant with a round peripheral feed secondary clarifier and ultra-violet (UV) disinfection. Influent is pumped upslope from a pump station located near the Alderbrook Inn. The treatment plant is approximately 40 feet above sea level. The influent enters the plant at a bar screen and a gravity grit channel (see Schematic in Appendix C). The wastewater is split in two streams to flow into six small aeration basins. The aeration basins use coarse bubble diffusers. Air is provided by two positive displacement blowers that sit on top of the aeration tanks. Two sedimentation tanks that used to be in the flow path have been taken out of service but remain empty. The flow leaving the aeration basins enters a round peripheral feed secondary clarifier. The flow leaving the clarifier enters a UV disinfection system. A sampling point is located at the effluent end of the UV disinfection system. The UV channel is followed by a manhole equipped with a Parshall flume and ultrasonic flow meter. The treated effluent flows by gravity to the outfall in Hood Canal.

DISCHARGE OUTFALL

Secondary treated and disinfected effluent is discharged from the facility via a 2700 foot outfall into Hood Canal. The depth of the outfall diffuser is at 150 feet below MLLW. The outfall has a simple diffuser which consists of two 2.5-inch horizontal ports approximately 13 feet apart. The second port is at a 60 degree angle from the first port.

In the past, swimming pool water has caused upset of the sewage treatment plant. The previous owners agreed to discharge swimming pool water directly to the outfall line. This practice should continue with the new owners to prevent overloading the plant.

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Residual Solids

The treatment facilities remove solids during the treatment of the wastewater at the headworks (grit and screenings), and at the clarifier, in addition to incidental solids (rags, scum, and other debris) removed as part of the routine maintenance of the equipment. Grit, rags, scum, and screenings are drained and disposed of as solid waste at the local landfill transfer station. Sludge is aerobically digested and hauled by D&E Septic to the Shelton Sewage Treatment Plant where it is re-entered at the head works and treated.

PERMIT STATUS

The previous permit for this facility was issued on April 9, 1991. The permit was modified on October 1991, and again on November 22, 1994. The permit was extended until April 16, 1998, and again was extended until June 30, 2002. The previous permit placed effluent limitations on 5-day Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), pH, Fecal Coliform bacteria, and total residual chlorine.

An application for permit renewal was submitted to the Department on July 13, 2001.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility received its last inspection on August 4, 2003. At that time the facility was completely shut down for six months to a year while the resort was being rebuilt and the highway relocated.

From 1998 to 2003, the Permittee had 11 violation of permit limits. Eight of those violation occurred in 2000 and none have occurred since. This information is based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department. The facility has been shut down since November 2002, so no violations have occurred during that time period. Of the violations since 1998, there were six violations relating to total suspended solids; one for chlorine residual (which because of UV disinfection, chlorine will no longer be required); one violation was for low pH; and four violations were for exceedance of the fecal coliform limits. Total residual chlorine was last monitored in February 1999 after which the UV disinfection system was put to use. Three of the fecal coliform violations occurred after the disinfection system switched over to UV.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the NPDES application and in discharge monitoring reports. The effluent is characterized as follows:

Table 1: Wastewater Characterization (January 1998 - October 2002)

<u>Parameter</u>	<u>Value</u>	<u>Permit Limits</u>
Flow (avg of monthly max)	0.0258 mgd	Flow 0.030 mgd
BOD ₅ 95 th percentiles	6.5 mg/L (monthly avg) 0.62 lbs/day (monthly avg) 98.6 % removal	30 mg/l, 7.5 lbs/day monthly 45 mg/l, 11 lbs/day weekly
TSS 95 th percentiles	13.4 mg/L (monthly avg) 4.2 lbs/day (monthly avg) 98.5 % removal	30 mg/l, 7.5 lbs/day monthly 45 mg/l, 11 lbs/day weekly
Fecal Coliform (95 th percentile of monthly geometric means since March 1999 when UV was installed)	27 org/100 ml	200 org/100 ml monthly

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Fecal Coliform (95 th percentile of weekly geometric means since March 1999 when UV was installed)	297 org/100 ml	400 org/100 ml weekly
pH	5.5 standard units (min.) 6.5 standard units (5 th percentile) 8.6 standard units (max)	6.0 standard units 9.0 standard units
Dissolved oxygen minimum	1.22 mg/L	

Table 1 shows several parameters that were monitored and reported on DMRs under the 1991 permit. The plant flow never exceeded the maximum average monthly design flow of 0.040 mgd. The time of year when the resort has been busy is during the summer months. The BOD and TSS concentrations have been kept very low and the loadings have also been kept low. The system appears to have a high rate of removal—reaching 98.6 percent for BOD and 98.5 percent for TSS. The fecal coliform in the effluent has been kept well below the permit limits of 200 org/100 ml monthly and 400 org/100ml weekly. The pH has not been above the limit of 9.0 but has dropped below 6.0. However, 95 percent of the pH samples were above 6.3.

The nature of the Alderbrook wastewater is residential with very little likelihood of toxics that usually come from commercial or industrial sources. There is one restaurant and bar that produces grease from the kitchen which is intercepted with a grease trap.

SEPA COMPLIANCE

With the exception of the outfall extension, most of the construction at Alderbrook that requires State Environmental Policy Act (SEPA) compliance has not involved the sewage treatment works. Most of the construction has been related to the moving of Highway 106 and reconstruction of the Inn into a conference center. The upland portion of the outfall effluent pipe was moved and replaced. The marine portion of the outfall extension was covered under a SEPA announcement and declared a non-significant action. It appears that SEPA requirements have been complied with.

PROPOSED PERMIT LIMITATIONS

Federal and state regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and Chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992.) The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the DMRs and the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the state of Washington were determined and included in this permit. The Department does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge

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conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from the July 1992 engineering report prepared by Parametrix and are as follows:

Table 2: Design Standards for Alderbrook WWTP.

Parameter	Design Quantity
Monthly average flow (max. month)	0.040 MGD
Annual average	0.030 MGD
Instantaneous peak flow (hourly)	0.090 MGD
BOD ₅ influent loading (max. month)	67 lbs/day
TSS influent loading (max. month)	67 lbs/day

The 1991 permit put limitations on flow at 0.03 MGD, however, the Engineering Report (Parametrix, 1992) shows the values in table 2. Therefore, the flow limit should average 0.040 mgd for the maximum month.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These effluent limitations are given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (federal) and in Chapter 173-221 WAC (state). These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

The following technology-based limits for pH, fecal coliform, BOD₅, and TSS are taken from Chapter 173-221 WAC are:

Table 3: Technology-based Limits.

Parameter	Limit
pH:	shall be within the range of 6 to 9 standard units.
Fecal Coliform Bacteria	Monthly Geometric Mean = 200 organisms/100 ml Weekly Geometric Mean = 400 organisms/100 ml
BOD ₅ (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L

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Parameter	Limit
TSS (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L

The previous permit had limits for total residual chlorine. However, because the facility stopped using chlorine disinfection and switched to UV disinfection, the limit was removed from the permit. The Permittee has retained a tank of chlorine gas to handle process problems and for emergency disinfection when the UV system is down. However, any use of chlorine for disinfection will require renewed testing for residual chlorine.

The following technology-based mass limits are based on WAC 173-220-130(3)(b) and 173-221-030(11)(b).

Monthly effluent mass loadings (lbs/day) were calculated as the maximum monthly design flow (0.04 MGD) x Concentration limit (30 mg/L) x 8.34 (conversion factor) = mass limit 10 lbs/day.

The weekly average effluent mass loading is calculated as 1.5 x monthly loading = 15 lbs/day.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the state of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The state was issued 91 numeric water quality criteria for the protection of human health by the U.S. EPA (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or

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adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

ANTIDEGRADATION

The state of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when receiving waters are of higher quality than the criteria assigned, the existing water quality shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to Hood Canal which is designated as a Class AA receiving water in the vicinity of the outfall. There are no other nearby point source outfalls. Significant nearby non-point sources of pollutants may include unidentified failing septic systems along the Canal. The Belfair area, which has historically had problems with failing septic systems, is in the process of looking into sewerage the town and sending the wastewater to the Northbay reclaimed water treatment facility near Allyn. Characteristic uses of Class AA water include the following: water supply (domestic, industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all uses.

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SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliform	14 organisms/100 ml geometric mean , and not have more than 10% of all samples exceeding 43 org./100 ml.
Dissolved Oxygen	7 mg/L minimum
Temperature	13 degrees Celsius maximum or incremental increases above background
pH	7.0 to 8.5 standard units
Turbidity	less than 5 NTUs above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls which the Department has determined to be AKART. A mixing zone is authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC and are defined as follows:

The dilution factors of effluent to receiving water that occur within these zones have been determined at the critical condition by the use of several sources. A dye study was conducted in 1991 (Parametrix, 1991) and dilution modeling was conducted by Parametrix (Parametrix 1992). However, these earlier analysis were conducted on the old outfall in shallower water. Therefore, a series of dilution models were run by the permit writer for this permit using Visual Plumes. The UDKHDEN model was used within the Visual Plumes platform. A series of 14 model runs were conducted (see Appendix C). Salinity, temperature, effluent flow and ambient current were varied to produce the different scenarios in each model run. Each model run used a 10th or 90th percentile salinity, temperature profiles from the surface down to diffuser depth at 4 meter intervals. Dilution factors were determined for each model run where the plume reached the surface and the model stopped. In most cases this was before the edge of the mixing zone was reached. However, increased dilution may not greatly increase beyond this point and as shown in the size of the dilution numbers below, the dilution factors are great enough that water quality standards will be protected. Therefore these are minimum dilutions and conservative values. The lowest dilution factors were chosen from the model runs and shown below (from Appendix C):

	Acute	Chronic
Aquatic Life	580:1	641:1

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even

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after dilution has occurred. Thus, the method of calculating water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

The critical condition for Hood Canal is the summer season when the temperatures of the canal warm the water and solar gain enhances algal bloom occur that may reduce the dissolved oxygen. Ambient data at critical conditions in the vicinity of the Alderbrook outfall was taken from the Department ambient monitoring data which is available on-line. Station HCB-004 was used for determining 10th and 90th percentile ambient concentrations. Past water quality studies and analysis were also used (Parametrix, 1991 and 1992). These studies considered both historical data and intensive monitoring conducted in September-October 1990. The ambient background data used for this permit includes the following:

Parameter	Value used
Velocity	0.1-2 cm/sec (see Appendix C)
Depth	140 feet
Temperature	Multiple temperatures in water column (See Appendix C) Surface 90 th percentile = 19.66°C
pH (high)	8.1
Dissolved Oxygen	7.2 mg/L (0-5m), 2 mg/L (all depths)
Fecal Coliform	2 org/100 ml
Salinity	Multiple salinities in water column (See Appendix C)
All Metals	0.0 (assumed below detection limits)

BOD₅—The ambient conditions for this part of Hood Canal show that Dissolved Oxygen (DO) is depressed below water quality standards in the deeper waters. The 303(d) listing for DO in South Hood Canal (1998 listing) stated that:

“These excursions beyond the criterion are a natural condition due to stratification with probable human caused influence based on the 6/97 judgment of Jan Newton (Department of Ecology). The low DO values have been getting worse over time.”

More recent analysis may show that the depressed DO is not natural. The past studies (Parametrix, 1991 and 1992) showed that the discharge had very little effect on the dissolved oxygen. The study modeled the drop in DO concentration would be only 0.0015 mg/L. The allowable decrease under the Water Quality Standards is 0.2 mg/L. This earlier Parametrix analysis used a much smaller dilution (165:1) based on the old outfall depth of 40 feet. The modeling at the new outfall depth shows that dilution would be much greater (641:1). BOD is a farfield pollutant, where the problems likely do not occur until mixing is complete.

As stated earlier in table 1, the plant has done a good job of removing BOD in the past. The facility has averaged 98.6 percent removal of BOD over the five years examined. This discharge with technology-based limitations results in a small amount of BOD loading relative to the large amount of dilution occurring in the receiving water at critical conditions. Technology-based limitations will be protective of dissolved oxygen criteria in the receiving water. The effect of BOD and DO limitation should be reexamined at the next permit renewal.

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Temperature--The impact of the discharge on the temperature of the receiving water was modeled by simple mixing analysis at critical condition. The receiving water temperature at the critical condition is 19.66°C and the effluent temperature is typically 20°C. The predicted resultant temperature at the boundary of the chronic mixing zone is 19.6601°C and the incremental rise is 0.0001°C.

Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, no effluent limitation for temperature was placed in the proposed permit.

pH--Because of the high buffering capacity of marine water, compliance with the technology-based limits of 6 to 9 will assure compliance with the Water Quality Standards for Surface Waters.

Fecal coliform--The numbers of fecal coliform were modeled by simple mixing analysis using the technology-based limit of 400 organisms per 100 ml and a dilution factor of 4,489.

Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters with the technology-based limit. Therefore, the technology-based effluent limitation for fecal coliform bacteria was placed in the proposed permit.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics are typically in municipal waste water: ammonia, and heavy metals. However, because the nature of the resort is unlikely to have industry with toxic discharges. The dilution is large enough that the small amount of metals discharged from Alderbrook will not cause a problem. Because ammonia is rapidly partitioned in marine water, there will be no toxic problems. The 1992 Parametrix studies did a good job of showing no reasonable potential for toxic metals to cause a water quality violation with a much lower dilution ratio based on the old outfall configuration. The new dilution factors with the new outfall should have even less of an impact.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing.

Toxicity caused by unidentified pollutants is not expected in the effluent from this discharge as determined by the screening criteria given in Chapter 173-205 WAC. Therefore, no whole effluent toxicity testing is required in this permit. The Department may require effluent toxicity testing in the future if it receives information that toxicity may be present in this effluent.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

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The Department has determined that the applicant's discharge is unlikely to contain chemicals regulated for human health. The discharge will be re-evaluated for impacts to human health at the next permit reissuance.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED 1991

Parameter	Existing Limits	Proposed Limits
Flow	0.030 mgd	0.040 mgd
BOD ₅ , TSS	30 mg/L, 7.5 lbs/day monthly 45 mg/L, 11.0 lbs/day weekly	30 mg/L, 10 lbs/day monthly 45 mg/L, 15 lbs/day weekly 85% removal of influent concentration
Fecal Coliform Bacteria	200 org/100ml monthly 400 org/100ml weekly	200 org/100ml monthly 400 org/100ml weekly
pH	Shall not be outside the range 6.0 to 9.0.	Shall not be outside the range 6.0 to 9.0.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

Monitoring of sludge quantity and quality is necessary to determine the appropriate uses of the sludge. Sludge monitoring is required by the current state and local solid waste management program and also by EPA under 40 CFR 503.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is consistent with agency guidance given in the current version of the Department's *Permit Writer's Manual* (July 1994) for an extended aeration activated sludge plant less than 2.0 mgd.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. The laboratory at this facility is accredited for: Dissolved Oxygen, pH, and

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TSS. Any other parameters that require testing under the permit, such as fecal coliform and BOD₅, must be analyzed at an outside laboratory.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in proposed permit requirement S.4 to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants. Condition S.4 restricts the amount of flow.

OPERATION AND MAINTENANCE (O&M)

The proposed permit contains Condition S.5 as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water quality problems the Permittee is required in permit Condition S7 to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503, and by the Department under Chapter 70.95J RCW and Chapter 173-308 WAC. The disposal of other solid waste is covered under the Statewide Biosolids Permit administered by the Department.

Requirements for monitoring sewage sludge and recordkeeping are included in this permit. This information will be used by the Department to develop or update local limits and is also required under 40 CFR 503.

PRETREATMENT

WAC 173-216-110 requires that the list of prohibitions in WAC 173-216-060 be included in the permit.

Federal pretreatment requirements in 40 CFR 403 and Sections 307(b) and 308 of the Clean Water Act apply to this facility. Therefore, notification to the Department is required when pretreatment prohibitions are violated and when new sources of commercial or industrial wastewater discharges are added to its system. The Alderbrook system serves residential customers and does not accept any industrial or commercial wastewater. The permit will therefore not require an industrial user survey.

OUTFALL EVALUATION

Proposed permit condition S.8 requires the Permittee to conduct an outfall inspection once the facility is operating and submit a report detailing the findings of that inspection. The purpose of the inspection is to

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determine the condition of the discharge pipe and diffusers and to determine if sediment is accumulating in the vicinity of the outfall.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual municipal NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.
1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.
1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.
1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.
1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Metcalf and Eddy.

1991. Wastewater Engineering, Treatment, Disposal, and Reuse. Third Edition.

Parametrix, Inc.

- 1992, July. Engineering Report, Wastewater Treatment and Disposal Evaluation, Alderbrook Inn. Union, WA. Parametrix, Inc. Sumner, WA 98390. Contract No. 21-2070-01.
- 1992, July. Technical Appendix, Water Quality Impact Analysis, Alderbrook Inn. , WA. Parametrix, Inc. Sumner, WA 98390. Contract No. 21-2070-01.
- 1991, September. Alderbrook Effluent Mixing Study Report. Prepared for Alderbrook Inn. Parametrix, Inc. Sumner, WA 98390. Contract No. 21-2070-01.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

Laws and Regulations(<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information
(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

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1994. Permit Writer's Manual. Publication Number 92-109

Water Pollution Control Federation.

1976. Chlorination of Wastewater.

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(E2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on July 17, 2003, and July 24, 2003, in the *Shelton/Mason County Journal* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on November 27, 2003, in the *Shelton/Mason County Journal* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Administrator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775.

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30-day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6554, or by writing to the address listed above.

This permit and fact sheet were written by Eric Schlorff.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a pollutant on an organism that occurs within a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of prevention, control, and treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (except in the case of fecal coliform). The daily discharge is calculated as the average measurement of the pollutant over the day.

Average Weekly Discharge Limitation -- The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The daily discharge is calculated as the average measurement of the pollutant over the day.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

CBOD₅ – The quantity of oxygen utilized by a mixed population of microorganisms acting on the nutrients in the sample in an aerobic oxidation for five days at a controlled temperature of 20 degrees Celsius, with an inhibitory agent added to prevent the oxidation of nitrogen compounds. The method for determining CBOD₅ is given in 40 CFR Part 136.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a pollutant on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

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Combined Sewer Overflow (CSO)--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of four discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring --Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial User-- A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

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Infiltration and Inflow (I/I)--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of precipitation-caused drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

Interference -- A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal and;

Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--A volume that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in State regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

Pass through -- A discharge which exits the POTW into waters of the--State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

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Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Significant Industrial User (SIU)--

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids are the particulate materials in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration or mass of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at
(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

Dilution model runs using UDKHDEN and visual plumes

No.	Salinity	Temp	Effluent Flow	Ambient Current	Acute Dilution	Chronic Dilution
1	Low	Low	0.046 mgd	Low	582	
2	Low	Low	0.046 mgd	Med		763
3	Low	Low	0.046 mgd	High	750	
4	High	Low	0.046 mgd	Low	697	
5	High	Low	0.046 mgd	Med		642
6	High	Low	0.046 mgd	High	837	
7	Low	High	0.046 mgd	Low	580	
8	Low	High	0.046 mgd	Med		<u>882</u>
9	Low	High	0.046 mgd	High	<u>743</u>	
10	High	High	0.046 mgd	Low	695	
11	High	High	0.046 mgd	Med		641
12	High	High	0.046 mgd	High	833	

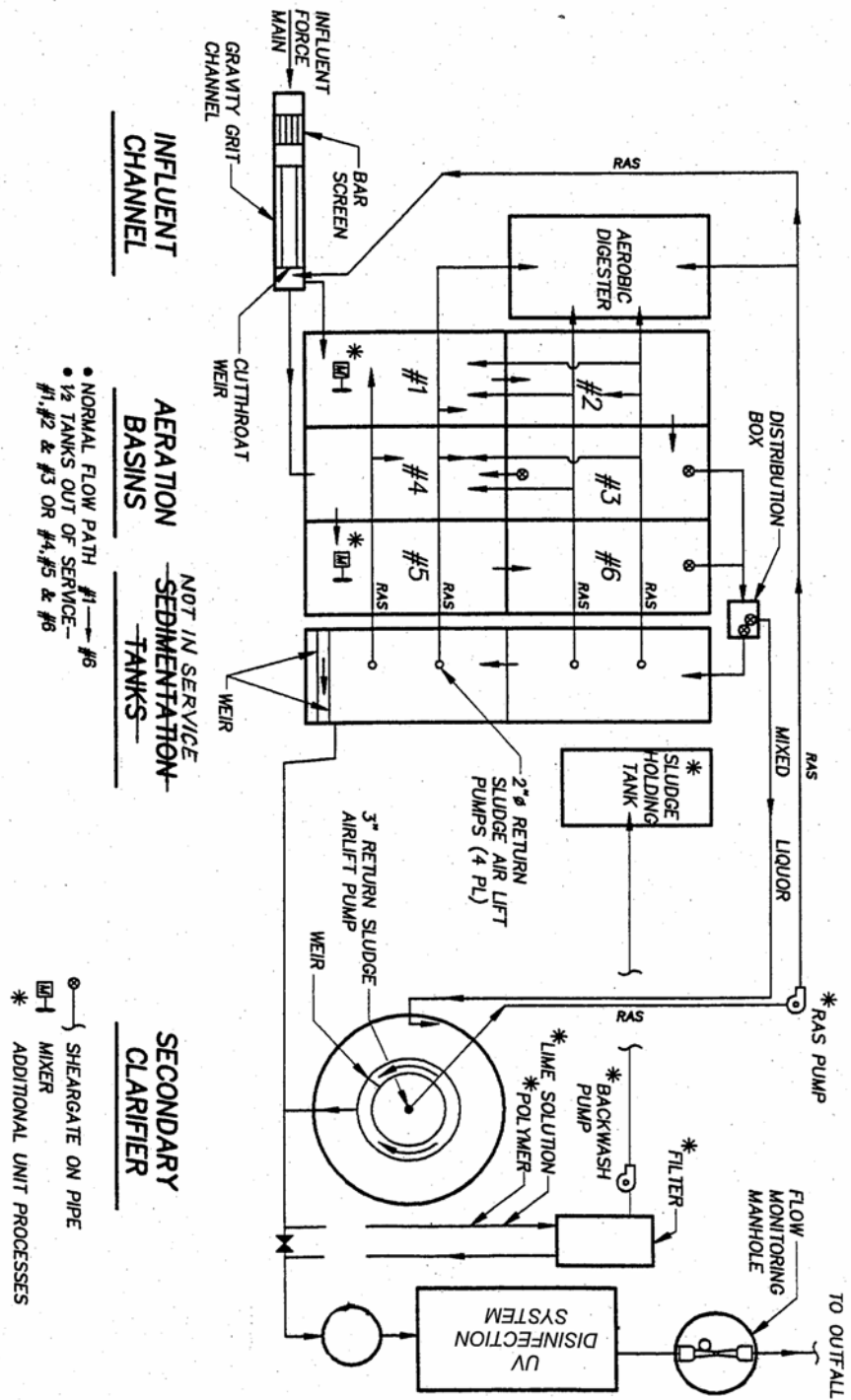
Inputs used in the above dilution models

Depth (m)	10 th percentile salinity	90 th percentile salinity	10 th percentile temperature	90 th percentile temperature
0	13.5	26.8	7.5	19.6
4	23.1	29.4	9.0	16
8	27.3	30.2	9.3	12.3
12	28.4	30.3	9.3	11
16	28.9	30.4	9.3	10.8
20	29.2	30.4	9.3	10.8
24	29.2	30.5	9.3	10.8
28	29.3	30.5	9.4	10.9

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32	29.3	30.6	9.3	10.9
36	29.4	30.6	9.3	11.0
40	29.4	30.6	9.3	11.0
44	29.4	30.6	9.3	11.0
48	29.4	30.5	9.2	11.0
52	29.4	30.7	9.3	11.0
Effluent flow: 0.046 mgd (Parametrix,1992)				
Current velocities: 90 th percentile: 2 cm/s; 50 th percentile: 1.05 cm/s; 10 th percentile: 0.1 cm/s (Parametrix, 1992). Very high: 4.02 cm/s (Run 13--matches velocity during dye study in Parametrix, 1991)				

**SCHEMATIC FLOW DIAGRAM
ALDERBROOK INN - ADVANCED
WASTE WATER TREATMENT PLANT**



APPENDIX D--RESPONSE TO COMMENTS

Comment received by Frank Meriwether, Washington State Department of Health. Comment summarized below.

Comment:

The previous owners decided it would be best to discharge the swimming pool water directly to the outfall line rather than inundate the WWTP. I remember they got permission from Ecology to do that, and it was fine with us since otherwise the WWTP got messed up.

Response:

Ecology notes the Department of Health's comment. In the past, discharge of pool water to the treatment plant has caused upsets and non-compliance with the discharge permit due to high levels of chlorine in the pool. While this permit does not specifically authorize the discharge of pool water to Hood Canal, the Permittee is encouraged to ensure that management practices are in-place to prevent plant upsets associated with draining of the pool.